Math 1
Quiz 7 Review

This quiz will be on Tuesday, November 1 and also covers arithmetic and geometric sequences.

Arithmetic sequences have a common difference d. Thus, the portion of the recursive formula that tells how to get from one term to the next is of the form

$$s(n+1) = s(n) + d.$$

Also, if any arithmetic sequence is graphed, the points will be collinear, and the slope of the line will be d. Assuming that the arithmetic sequence starts at $n = 1$, its explicit formula is of the form

$$s(n) = d(n-1) + s(1).$$

You will need to adjust if the starting value is different.

Geometric sequences have a common ratio r. Thus, the portion of the recursive formula that tells how to get from one term to the next is of the form

$$s(n+1) = s(n) \cdot r.$$

Also, if any geometric sequence is graphed, the points will lie on one exponential curve (if $r > 0$ and $r \neq 1$) or two exponential curves (if $r < 0$ and $r \neq -1$). Assuming that the geometric sequence starts at $n = 1$, its explicit formula is of the form

$$s(n) = s(1) \cdot r^{n-1}.$$

You will need to adjust if the starting value is different.

Note that, for geometric sequences, we rarely deal with the cases $r = -1$, $r = 0$, and $r = 1$.

Sequences that are neither arithmetic nor geometric may have recursive and explicit forms; however, even if they do exist, they may be difficult to determine. Not all sequences (even those whose outputs are all numbers) have definite patterns.